A.O.SMITH

Dura-Power®

COMMERCIAL ELECTRIC WATER HEATERS

DEN & DEL MODELS

Designed for use as a recovery heater having its own storage tank. Available in upright standard models (DEN) and lowboy models (DEL).

Meets or exceeds the requirements of ASHRAE 90.1b-1992 Standard for energy efficiencies.

See page C 029.0 for service wiring and fuse selection.

FEATURES

GLASS-LINED TANK - Thirteen sizes; 6 thru 119 gallon (22 thru 450 liter) capacity. Tank interior is coated with glass specially developed by A. O. Smith Ceramic Research for water heater use. Tanks rated 150 psi (1034 kPa) working pressure; tested at 300 psi (2068 kPa). Foam insulation provides maximum energy savings by minimizing radiant standby heat loss.

ELEMENTS - Zinc plated copper sheaths for longer life. Medium watt density; means lower surface temperature to minimize scale build-up and more surface to heat water. Element sizes from 1.5 to 6 KW. Maximum input 12 KW (see chart on back).

STANDARD VOLTAGES - 120, 277 single phase and 208, 240 and 480V unbalanced three-phase delta; easily converted to single-phase at terminal block (except 208V with 6000 watt elements). Single element heater, single-phase only.

TERMINAL BLOCK - Factory installed. Just bring the service to heater and connect to block. Terminal block not supplied on 120V & 277 volt models.

CONTROLS - Temperature control (adjustable through a range of 110° to 170°F [43-77°C]) and manual reset high temperature cutoff per element (dual element models). Factory wired for non-simultaneous operation; easily converted to simultaneous element operation (three phase models only).

OPTIONAL

GOLDENROD ELEMENTS - All DEN & DEL models are available with the Goldenrod® 24K gold plated elements (patent pending). Goldenrod® elements provide long life and 6 times the scaling resistance of standard incoloy elements. Goldenrod® elements carry a three-year warranty against failure due to lime scale build-up.

ELEMENT AVAILABILITY CHART

Input	120V	208V	240V	277V	480V
1,500	YES	YES	YES	YES	—
2,000	YES	YES	YES	YES	YES
2,500	YES	YES	YES	YES	YES
3,000	YES	YES	YES	YES	YES
3,500	—	—	YES	—	—
4,000	—	YES	YES	YES	YES
4,500	—	YES	YES	YES	YES
5,000	—	YES*	YES*	YES*	YES*
5,500	—	—	YES*	—	—
6,000	—	YES**	YES	YES	YES

NOTE: DEL-6 not available in above 2.5 KW.
DEL-6 not available in 480V.
* Not available in DEL-10, DEL-15 and DEN-30.
** A6 non-simultaneous circuit only.

DEL MODELS **DEN MODEL**

LIMITED WARRANTY OUTLINE

If the tank should leak any time during the first three years, under the terms of the warranty, A. O. Smith will furnish a replacement heater; installation, labor, handling and local delivery extra. **THIS OUTLINE IS NOT A WARRANTY.** For complete information, consult the written warranty or A. O. Smith Water Products Company.

OTHER STANDARD FEATURES

• Simplified circuitry, color coded for ease of service • Anode rod for maximum corrosion protection • Cabinet has bonderized undercoat with baked enamel finish • Top inlet and outlet openings • Drain valve.

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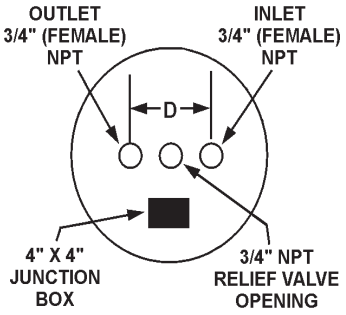
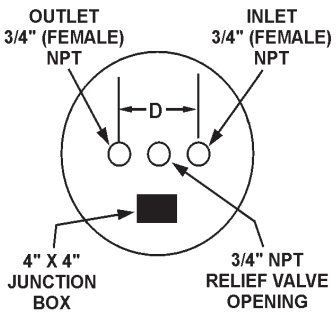
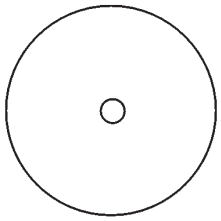


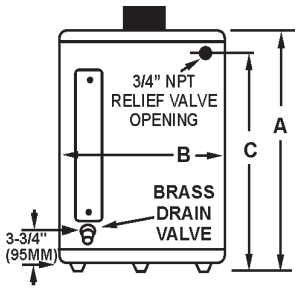
TOP VIEW
DEN/DEL 30/40/50



TOP VIEW
DEN 6 - 120



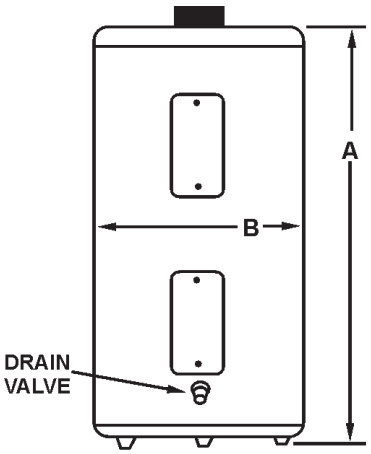
TOP VIEW
DEL 30/40/50



FRONT VIEW
DEL 30/40/50

ROUGH-IN DIMENSIONS IN INCHES AND MILLIMETERS

Models	No. of Elements	Tank Capacity US Gals.	Tank Capacity Litres	A inches	A mm	B inches	B mm	C inches	C mm	D inches	D mm	Approx. Shipping Weight Lbs.	Approx. Shipping Weight Kg.
DEL-6	1	6	23	15 1/2	394	14 1/4	362	11	279	-	-	35	15.9
DEL-10	1	10	38	18 1/4	464	18	457	12 1/2	318	-	-	54	24.5
DEL-15	1	15	57	26	660	18	457	20 1/2	521	-	-	58	26.3
DEL-20	1	20	76	22 1/4	565	21 3/4	552	15 3/8	391	-	-	73	33.1
DEL-30	2	30	114	30 7/8	784	21 3/4	552	24 1/8	613	8	203	100	45.4
DEL-40	2	40	151	32 1/4	819	23 1/4	591	25 9/16	649	8	203	125	56.7
DEL-50	2	50	189	32 1/4	819	23 1/4	591	25 1/8	638	8	203	166	75.3
DEN-30	1	30	114	34 1/2	876	20 1/4	514	-	-	8	203	98	44.5
DEN-40	2	40	151	45 1/8	1146	20 1/2	521	-	-	8	203	113	51.3
DEN-52	2	50	189	54 7/8	1394	20 1/2	521	-	-	8	203	131	59.4
DEN-66	2	66	250	60 3/4	1543	21 3/4	552	-	-	8	203	176	79.8
DEN-80	2	80	303	59 3/8	1508	24	610	-	-	8	203	211	95.7
DEN-120	2	119	450	62 7/16	1586	29 3/8	746	-	-	8	203	326	147.9

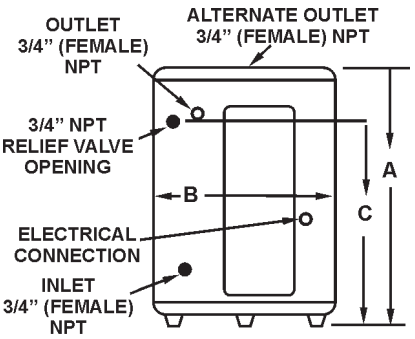


FRONT VIEW
DEN 30 - 120

RECOVERY CAPACITIES

Element Wattage (Upper/Lower)	INPUT KW	F° C°	U.S. Gallons/Hr and Litres/Hr at TEMPERATURE RISE INDICATED 40F° 22C°	60F° 33C°	80F° 44C°	100F° 56C°	120F° 67C°
NON-SIMULATANEOUS OPERATION							
/1500		GPH	15	10	8	6	5
	1.5	LPH	58	38	29	23	19
/2000		GPH	20	14	10	8	7
	2.0	LPH	77	51	38	31	26
/2500		GPH	25	17	13	10	8
	2.5	LPH	96	64	48	38	32
3000/3000		GPH	30	20	15	12	10
	3.0	LPH	115	77	58	46	38
4000/4000		GPH	41	27	20	16	14
	4.0	LPH	153	102	77	61	51
4500/4500		GPH	46	30	23	18	15
	4.5	LPH	173	115	86	69	58
5000/5000		GPH	51	34	25	20	17
	5.0	LPH	192	128	96	77	64
6000/6000		GPH	61	41	30	24	20
	6.0	LPH	230	153	115	92	77
SIMULATANEOUS OPERATION							
3000/3000		GPH	61	41	30	24	20
	6	LPH	230	153	115	92	77
4000/4000		GPH	81	54	41	32	27
	8	LPH	307	205	153	123	102
4500/4500		GPH	91	61	46	36	30
	9	LPH	345	230	173	138	115
5000/5000		GPH	101	68	51	41	34
	10	LPH	384	256	192	153	128
6000/6000		GPH	122	81	61	49	41
	12	LPH	460	307	230	184	153

Recovery capacities at 100°F rise equal: for non-simultaneous element operation = 4.1 gal. x KW of one element; for simultaneous element operation = 4.1 gal. x 2/3 KW of both elements. For other rises multiply element KW as previously explained by 410 and divide by temperature rise. Full load current for single phase = total watts ÷ voltage.



FRONT VIEW
DEL 6/10/15/20

SUGGESTED SPECIFICATIONS

The water heater(s) shall be Dura-Power Model(s) No. _____ as manufactured by A. O. SMITH or an approved equal. Heater(s) shall be rated at _____ KW, _____ volts, _____ phase, 60 cycle AC, and listed by Underwriters' Laboratories. Tank(s) shall be _____ gallon capacity. Heater(s) shall have 150 psi (1034 kPa) working pressure and be equipped with extruded high density anode rod. All internal surfaces of the heater(s) exposed to water shall be glass-lined with an alkaline borosilicate composition that has been fused to steel by firing at a temperature range of 1600°F (870°C). Electric heating elements shall be medium watt density with zinc plated copper sheath. Each element shall be controlled by an individually mounted thermostat and high temperature cutoff switch. The outer jacket shall be of baked enamel finish and shall be provided with full size control compartment for performance of service and maintenance through hinged front panels and shall enclose the tank with foam insulation. Electrical junction box with heavy duty terminal block shall be provided (except on 120V & 277V [no junction box on DEL-6 thru 20]). The drain valve shall be located in the front for ease of servicing. Heater tank shall have a three year limited warranty as outlined in the written warranty. Fully illustrated instruction manual to be included.

A.O. Smith Water Products Co., Inc. On Line
www.hotwater.com
For Technical Information and Automated Fax Service,
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A. O. Smith Enterprises Ltd.
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